No.



9800310

# THE UNITED STATES OF ANTERIOA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

ADM/Agri Sales, Inc.

MICCOIS, THERE HAS BEEN PRESENTED TO THE

### Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT SED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

### BEAN, LIMA

'Merced'

In Testimony Thereof, I have hereunto set my hand and caused the seal of the Hant Pariety Protection Office to be affixed at the City of Washington, D.C. this eighth day of Way, in the year of our Lord two thousand one.

alank. Post

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Agricultur

EXHIBIT A: Origin and breeding history

1. Geneology:

	'Maffei 15'	'Kingston'		
Breeding	Inbred-backcross method	Recurrent parent: Maffei 15		
Method:		Donor parent: Kingston		

2. Selection and multiplication:

Location	Activity	Comment
Greenhouse F1-BC2 (~F4)	3 crosses to M15	Family structure established with 3 <sup>rd</sup> cross to M15; families maintained separately;
F5, F6	2 cycles of single-seed descent	Pure lines established
F7	Selection between lines for maturity, upright plant type	
F8	Selection between lines for plant size, seed color intensity, seed size	
F9	Selection between lines for yield, seed size, uniformity	Line '555K-62, A-sel' chosen for multiplication
F10+	Multiplication of Foundation quality stock	A STATE OF THE STA

- 3. Evidence of uniformity and stability: I have personally observed and evaluated B16607 under a variety of environments and conditions over the past 5 years, including observation, yield trials and stock seed multiplication. I attest to the fact that B16607 is stable and uniform.
- 4. I know of no recurring variants except for occasional (<.001%) sterile plants.

## EXHIBIT B: STATEMENT OF DISTINCTNESS

- Identify the varieties: The variety most similar to 'Merced' is 'Maffei 15'. However, B16607 has a higher density (specific gravity) than M15 (1.367 vs 1.336). B16607 is also 8.3 days later to reach processing maturity than M15 and has a smaller size (9% vs 18% 26/64ths) and plumper shape (86.5% vs 62.3 than M15 (that % of seeds 22-24/64ths that are > 12/64ths x 3/4"). B16607 also has a higher seed-count-per-pound than M15 (1163 vs 988). Data were collected for at least 4 years over a six-year period between 1992 and 1997 and over two locations.
- Attach statistical data:

Table 1. Data Summary.

Variety	Year	Specific gravity	Seeds/ pound	Seed size %>26/64ths	Seed size (%22R,	Data	Days to	Data
		(Density)	Pound	70° 20/04tils	$>12/64^{th}s$	Location	processing maturity	Location
B16607	1992	NA	1248		Handle III		117	Delawa
	1993	NA					83	Delaware "
	1994	1.373	1285	5	93	California	79	44
	1995	1.365	1257	3	82	"	77	44
	1996	1.368	1014	16	84	**	NA	
	1997	1.359	1096	14		. "	NA NA	
Average		1.367	1163.0	9.5	86.5		89.0	
							ALL STATES IN	
Maffei 15	1992	NA					96	Delaware
	1993	NA					77	" Delawale
	1994	1.333	1015	20	47	California	76	**
	1995	1.337	993	24	68	"	76	
	1996	1.356	956	16	72	"	NA NA	
	1997	1.320	989	12	78	46	NA NA	
Average		1.336	988.3	18.0	62.3		81.3	

NA = Not available for the year or location:

#### Table 2. Data Review.

Novelty and distinctness is supported by inspection of the data and by analysis of density values for B16607 and M15. In the case of seeds/pound, seed shape and maturity, the data strongly support the differences purported although they were not analyzed statistically. In each instance the data of the two varieties do not overlap and indicate "obvious" differences between them. Raw data for the specific gravity of the two varieties is presented in the appendix on pages 3 and 4.

	Variable					
	Specific gravity	Seeds/pound	Days to processing maturity	Seed shape <sup>1/</sup> (%>26/64ths)	Seed shape <sup>2/</sup> (%22/64ths >12/64ths x 3/4ths)	
Statistic <sup>3/</sup>	Paired t-test	Inspection	Inspection	Inspection	Inspection	
Result: B16607 is:	Higher s.g. P<.0001	Greater	Later	Smaller	Thicker	
Reference	MSTATC	Not applicable	Not applicable	Not applicable	Not applicable	

Seed shape: Measurements are in 64ths of an inch; this is a measure of size;

Seed shape: Measurements are in 64ths of an inch; this is a measure of thickness;

- 3/ Statistical references:
- MSTATC: Michigan State University Microcomputer Statistical Programs for Agriculture Experimentation, 1992.
- Statistical Methods. Sixth Edition. 1978. Snedecor and Cochran.
- Agricultural Experimentation: Design and Analysis. Thomas M. Little and F.J. Hills. 1977.

Please let me know if I can further address any questions.

Data file: □&k0S□&k2GB16607□&k0S Title: PVP B16607 VS M15

Function: T-TEST FOR DENSITY (SPECIFIC GRAVITY)

(paired test)

SAMPLE ONE:

### SAMPLE TWO:

Variable 4 : AD Variable 4 : AD Cases 1 through 9

Cases 10 through 18 Mean: 1.3669 Mean: 1.3359 Variance: 0.0001 Variance: 0.0002 Standard Deviation: 0.0098 Standard Deviation: 0.0135

F-TEST FOR THE HYPOTHESIS "VARIANCE 1 = VARIANCE 2"

F Value: 1.9228

Numerator degrees of freedom: Denominator degrees of freedom:

Probability: 0.3742

Result: Non-Significant F - Accept the Hypothesis

# T-TEST FOR THE HYPOTHESIS "MEAN 1 = MEAN 2"

Variance of the difference between the means: 0.0000 Standard Deviation of the difference: 0.0043 t Value: 7.2843 Effective degrees of freedom: Probability of t:

Result: Significant t - Reject the Hypothesis

Confidence limits for the difference of the means (for alpha=0.01): 0.031 plus or minus 0.014 (0.017 through 0.045)

0.0001

# Appendix 1. Raw Data of specific gravity values for B16607 and M15 and data analysis.

### B16607-6

Data file : □&kOS□&k2GB16607□&kOS

Title: PVP B16607 VS M15

Function: PRLIST
Data case no. 1 to 18

List Of Variables

\_\_\_\_\_

Var Type Name / Description

1 TEXT 12 VARNAME

2 NUMERIC YR

3 NUMERIC REP

4 NUMERIC AD

5 NUMERIC VAR#

7 NUMERIC AD-SCALED

CASE NO.	VARIETY	YEAR	TRIAL REP	DENSITY	VAR#	SCALED DENSITY
1	B16607	4	2	1.380	1	380
2	B16607	4	3	1.372	1	372
3	B16607	4	4	1.368	1	368
4	B16607	5	2	1.358	1	358
5	B16607	5	3	1.372	1	372
6	B16607	6	2	1.366	1	366
7	B16607	6	3	1.369	1	369
8	B16607	7	2	1.371	1	371
9	B16607	7	3	1.346	1	346
10	M15	4	2	1.341	2	341
11	M15	4	3	1.331	2	331
12	M15	4	4	1.327	2	327
13	M15	5	2	1.332	2	332
14	M15	5	3	1.341	2	341
15	M15	6	2	1.354	2	354
16	M15	6	3	1.357	2	357
17	M15	7	2	1.323	2	323
18	M15	7	3	1.317	2	317

FORM LPGS-470-15 (4-78)

925555

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C (Lima Bean)

### OBJECTIVE DESCRIPTION OF VARIETY

REFERENCES: See Reverse. LIMA BEAN (PHASEOLUS LUNATUS)	
NAME OF APPLICANTIS	FOR OFFICIAL USE ONLY
AGRISALES, INC. (California)	PVPO NUMBER 9800310
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	
POBox 68	DESIGNATION
Ordbend, CA 95943	
Dless the approximate the test of the test	
Place the appropriate number that describes the varietal character of this variety in Place a zero in first box (e.g. 0 8 9 or 0 9 ) when number is either 99 or less	or 9 or less.
1. TYPE:  1 - GREEN SHELL 2 - DRY EDIBLE 3 - DUAL PURPOSE	
a project of the contract of t	
2. REGION OF ADAPTABILITY IN THE U.S.:	
Best adapted in: 1= NORTHWEST 2= NORTHCENTRAL 3= NORTHEAST 6= MOST REGIONS . note: espe	ec. California
3. MATURITY (Days from seeding to first harvest):	
9 5 GREEN SHELLS . 1 0 8 DRY SEEDS	
No. of days Earlier than: 1 = HENDERSON BUSH 2 = THAXT	ER 3 = BURPEE'S IMPROVED BUSH
4 = SIEVA 5 = FLORIDA BUTTER	6 = KING OF THE GARDEN
0 5 No. of days Later than 7 7 - OTHER (Specify) Maffei	15
4. PLANT:	
1 = DETERMINATE, ERECT BUSH 2 = DETERMINATE, SPRAWLING BUSH 1 -4 = INDETERMINATE, POLE	3 - DETERMINATE, SEMIPOLE
0 6 0 CM. HEIGHT	0 2 CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF
6 0 CM. SPREAD 0 8 NUMBER INTERNODES ON MAIN OF TERMINAL INFLORESCENCE	STALK BETWEEN PRIMARY LEAF AND BASE
MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF	
2 Main stalk: 1 * BRITTLE 2 = WIREY 1 Main stalk:	1 = STOUT 2 = THIN
37 Flower position:	
3 Pod position: 1 = LOW, CONCENTRATED 2 = HIGH, CONCENT	RATED 3 = SCATTERED
5.FLEAVES:	
1 - 1 = SMOOTH 2 = WEINKLED 1 1 = DULL 2 = GLOSSY	Thickness: 3 = THICK 2 = MEDIUM
Size: 1 = SMALL (Sieva) 2 = MEDIUM 3 = LARGE (Prizetaker)	0 7 CM. PETIOLE LENGTH (To basal leaflets of first trifoliate leaf)
2 Tip shape of center leaflet: 1 = ROUNDED 2 = TAPER POINTED 3 = SHARP	POINTED
2 PUBESCENCE - Dorsal:	
1 = NONE 2 = SLIGHT 3 = CONSIDERABLE	
2 PUBESCENCE - Ventral:	
1 Color: 1 = GRAY GREEN 2 = MEDIUM GREEN (Burpee's Improved Bush) 3	= DARK GREEN (Sieva)
6. FLOWERS:	
1 Color: 1 = WHITE 2 = CREAM 3 = PINK 4 = LILAC 5 = PURPLE 6 =	OTHER (Specify)
1 6 Recemes: CM. TO BASE OF TERMINAL FLORET 25 CM 2 4 NUMBER	BER FLOWERS PER RACEME

FORM LPGS 470-15 (PAGE 2 OF 3 PAGES) 7. FRESH PODS:	
3 Color: 1 = LIGHT GREEN (Thaxter) 2 = MEDIUM GREEN	(Florida Butter) 3 = DARK GREEN (Thorogreen Early)
0 6 CM. LENGTH 1 9 MM. WIDTH (Between sutures)	0 7 MM. THICKNESS 2 7 WIDTH THICKNESS X 10
2 Cross section pod shape: 1 = FLAT 2 = OVAL 3 = ROUND	2 Curvature: 1 = STRAIGHT 2 = SLIGHTLY CURVED
3 MM, SPUR LENGTH	1 Spur: 1=STRAIGHT 2=SLIGHTLY CURVED 3=CURVED
2 Surface: 1 = SHINY 2 = DULL	1 Surface: 1 = SMOOTH 2 = BLISTERED
Pubescence: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE	3 NUMBER OF SEEDS PER POD
6 8 NUMBER PODS PER PLANT (Once over hervest)	1 Machine harvest: 1 = ADAPTED 2 = NOT ADAPTED
Condition of pods at once-over harvest: 1 0 % DRY	n a % YELLOW 9 0 % GREEN
8. SEEDS:	
1 = MONOCHROME 2 = POLYCHROME	2 1 = SHINY 2 = DULL
0 3 Primary color: 1 - WHITE 2 - GREENISH WHITE	3 - GREEN 4 - YELLOW 5 - BUFF 6 - TAN
n a Secondary color: 7 = BROWN 8 = PINK 9 = RED	10 = PURPLE 11 = BLACK 12 = OTHER (Specify)
Color pattern: 1 = SPLASHED 2 = MOTTLED 3 = STE	IPED 4-FLECKED 5-DOTTED
1= HILAR RING 2= HILAR SI	JRFACE 3 = STROPHIOLE 4 = MICROPYLE 5 = SIDES
Secondary color location: 6 = DORSAL SURFACE 7 8 = COMBINATION OF LOCATION	NOT RESTRICTED TO ANY AREA
Hilar ring: 1 = NOT PRESENT 2 = NARROW 3 = WIDE 4 = BUTTERFLY SHAPED	1 Vein-like under coat pattern: 1 = ABSENT 2 = PRESENT
3 Cotyledon color: 1 = WHITE 2 = PALE GREEN 3 = 0	SREEN 1 Seed coat 1=SMO 2=WRN
9. SEED SHAPE AND SIZE:	
Hilum view: 1 = FLAT 2=ELLIPTICAL 4 = ROUND	4 Side view: 3 = KIDNEY 4 = TRUNCATE ENDS
2 Cross section: 1 = FLAT 2 = ELLIPTICAL 3 = OVAL	4 0 GM, WEIGHT PER 100 SEEDS
1 Classification: 1 = SIEVA 2 = INTERMEDIATE 3 = FO	RDHOOK
0 9 MM. WIDTH (Dorsal to ventral)	0 5 MM. THICKNESS (Side to side)
1 2 MM. LENGTH	1 7 WIDTH X 10
10. ANTHOCYANIN: (1 = Absent, 2 = Present)	
1 FLOWERS 1 STEM 1 PODS	1 SEEDS 1 LEAVES
11. DISEASE RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Re	sistant)
0 RUST (Specify race) 0 ANGULAR LE	AF SPOT 0 BACTERIAL WILT
O COMMON BEAN MOSAIC O ANTHRACNOS	E UIMA BEAN MOSAIC
0 SOUTHERN BEAN MOSAIC 0 FUSARIUM RO	
0 N.Y. 15 BEAN MOSAIC 2 DOWNY MILD	ABC_0 POWDERY MILDEW
0 BEAN MOSAIC VIRUS 4 0 HALO BLIGHT	
0 ALFALFA MOSAIC VIRUS 0 ALFALFA MO	SAIC VIRUS 2 POD MOTTLE VIRUS
0 RED NODE VIRUS 0 ROOT KNOT N	OTHER (Specify)

### REFERENCES

The following publications may be used as references in completing this form:

- 1. Beans of New York. Vol. 1 Part II of Vegetables of New York. U.P. Hedrick et al. J. B. Lyon Company, Albany, N.Y. 1931.
- 2. Yarnell, S. H., Cytogenetics of the Vegetable Crops IV. Legumes. Bot. Rev. 31:247 330. 1965.
- 3. USDA Yearbook of Agriculture. 1937.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

COMMENTS:

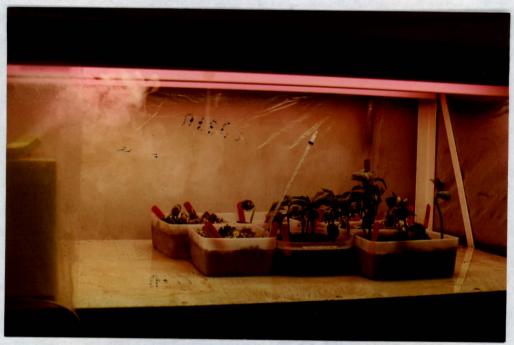
RE: downy mildew (Phythopthora phaseoli):
Races A-C have not been available for years. Testing was carried out using the prevelant races available during the development period.
Testing was done using race "D" and a strain that is probably race "E".
It is likely that B16607 is resistant to races A-C however, since extensive backcrossing was employed during development. The recurrent parent was Maffei 15, resistant to races A-D.

.98 JUN -5 P2 29

USDA-AMS FRYPO



Resistant Cultivar = 'Merced' Susceptible Cultivar = 'Kingston'



ASI's Downy mildew screening chamber

REPRODUCE LOCALLY. Include form number and date on all reproductions.		FORM APPROVED - OMB NO. 0581-00!	
LUS. DEPARTMENT OF AGRICULTURE  AGRICULTURAL MARKETING SERVICE	The following statements are made in accordance with the Privacy Act. 1974 [5 U.S.C. 552a] and the Paperwork Reduction Act (PRA) of 1995. Application is required in order to determine if a plant variety protective certificate is to be issued (7 U.S.C. 2421). Information is held confident until certificate is issued (7 U.S.C. 2426).		
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP			
1. NAME OF APPLICANT(S)  AGRISALES, INC.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER B16607	3. VARIETY NAME  Merced  (proposed)	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)	5. TELEPHONE (Include area code)	6. FAX (include area code)	
POBox 68	(530) 934-3385	(530) 342-6359	
3058 Highway 45 Ordbend, CA 95943	7. PVPO NUMBER 9800310		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate bit	lock. If no, please explain.	X YES NO	
9. Is the applicant [individual or company] a U.S. national or U.S. based company if no, give name of country	7	X YES NO	
10. Is the applicant the original owner? XYES NO If no, please ans	wer the following:		
a. If original rights to variety were owned by individual(s), is (are) the	ne original owner(s) a U.S. natio	nal(s)?	
YES NO If no, give name of country			
b. If original rights to variety were owned by a company, is the original	ginal owner(s) a U.S. based com	pany?	
YES NO If no, give name of country	BELLEVA DE L		
11. Additional explanation on ownership (If needed, use reverse for extra space):			
PLEASE NOTE:			
Plant variety protection can be afforded only to owners (not licensees) who meet	one of the following criteria:		
1. If the rights to the variety are owned by the original breeder, that person must	be a U.S. national, national of	a UPOV member country, or national	

- 1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by
  nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same
  genus and species.
- 3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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